CLAIMS

1.   A method for determining a first and a second reference picture used for inter-prediction of a block, comprising the steps of:

(A)   finding a co-located picture and block;

(B)   determining a reference index;

(C)   mapping the reference index to a lowest valued reference index in a current reference list; and

(D)   using said reference index to determine said second reference picture.

2.   The method according to claim 1, wherein said block comprises an H.264 direct-mode macroblock or macroblock partition.

3.   The method according to claim 1, wherein step (C) further comprises:

storing a unique identifier for each reference picture, wherein said unique identifier is associated from (i) when said unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture.

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4.   The method according to claim 1, further comprising the step of:

storing a unique identifier of a direct-mode reference picture.

5.   The method according to claim 4, wherein said direct-mode operates on (i) a macroblock when in a first configuration and (ii) a macroblock partition when in a second configuration.

6.   The method according to claim 4, further comprising the step of:

searching the current reference List0 for the lowest valued reference index identifier by said unique identifier and returning the value of said lowest valued reference index.

7.   The method according to claim 1, wherein said method further comprising the step of:

implementing an interpolative direct mode prediction and a flexible choice for the picture referenced by a finite index reference.

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8.   The method according to claim 1, wherein said method is implemented in a video encoder.

9.   The method according to claim 1, wherein said method is implemented in a video decoder.

10.   An apparatus for determining a first and a second reference picture used for inter-prediction of a block, comprising the steps of:

   means for finding a co-located picture and block;

5   means for determining a reference index;

   means for mapping the reference index to a lowest valued reference index in a current reference list; and

   means for using said reference index to determine said second reference picture.

11. The apparatus according to claim 10, wherein said block comprises an H.264 direct-mode macroblock or macroblock partition.

12. The apparatus according to claim 10, wherein said means for mapping comprises:

means for storing a unique identifier for each reference picture, wherein said unique identifier is associated from (i) when said unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture.

13. The apparatus according to claim 10, further comprising:

means for storing a unique identifier of a direct-mode reference picture.

14. The apparatus according to claim 13, wherein said direct-mode operates on (i) a macroblock when in a first

configuration and (ii) a macroblock partition when in a second

configuration.

15. The apparatus according to claim 13, further

comprising:

means for searching the current reference List0 for the

lowest valued reference index identifier by said unique identifier

5   and returning the value of said lowest valued reference index.

16. The apparatus according to claim 10, wherein said

apparatus further comprising:

means for implementing an interpolative direct mode

prediction and a flexible choice for the picture referenced by a

5   finite index reference.

17. The apparatus according to claim 10, wherein said

apparatus is implemented in a video encoder.

18. The method according to claim 10, wherein said

apparatus is implemented in a video decoder.